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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/373,837	08/13/1999	METIN AYDEMIR	RA999-005	2996
45503	7590	07/08/2005	EXAMINER	
DILLON & YUDELL LLP 8911 N. CAPITAL OF TEXAS HWY., SUITE 2110 AUSTIN, TX 78759			PHAN, MAN U	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/373,837	Applicant(s) AYDEMIR ET AL.	
	Examiner Man Phan	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-18 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-18 and 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment and Argument

1. This communication is in response to applicant's 04/06/2005 Amendment in the application of Aydemir et al. for a "Delayed-start method for internal flow control in packet switches" filed 08/13/1999. The proposed amendments to the claims and response have been entered and made of record. Claims 7, 19 have been canceled per Applicant's request, and claims 1 and 13 have been amended. Claims 1-6, 8-18, 20-25 are pending in the application.
2. Applicant's remarks and argument to the rejected claims are insufficient to distinguish the claimed invention from the cited prior arts or overcome the rejection of said claims under 35 U.S.C. 103 as discussed below. Applicant's argument with respect to the pending claims have been fully considered, but they are not persuasive for at least the following reasons.
3. Applicant's argument with respect to the rejected claims that the cited references fails to disclose or suggest "*delay interval based upon input buffer occupancy*". However, as discussed in the previous Office Action, Fichou et al. (US#5,790,522) is applied herein merely for the teaching of the traffic congestion control utilizing separate queues and queuing delays (and jitter) for controlling the delays between packets, and downstream congestion is achieved. Fichou's congestion control system includes defining a threshold level for each of the input buffers in the receive adapter; monitoring the input buffer contents to detect when the contents of an input buffer exceed the defined threshold level; and enabling the transfer of packets at a rate lower than the predetermined packet transfer rate by allowing the spacing function to be enabled only

while the buffer contents remain below the threshold level, otherwise disabling the spacing function to cause packets to be transferred at the predetermined packet transfer rate (*controlling the delays between packets based upon input buffer occupancy*). The Applicant's attention is directed to the spacing function mechanism for the congestion control shown in Fig. 4, in which the space mechanism can be used to reduce the rate of transfer of data to the switch fabric. The spacing function causing received packets having other than the predetermined priority level to be transferred to the switch fabric at a transfer rate lower than the predetermined packet transfer rate of the switch (*controlling the delays between packets based upon input buffer occupancy*) (Col. 6, lines 60 plus). Furthermore, Figs. 7 and 8 discloses the buffer management mechanism and threshold controlled spacing mechanism to used in congestion control, in which the threshold controlled mechanism can be implemented in the adapter: switch input queues sizes are monitored and as soon as the number of cells queued reaches a threshold Te1, spacing is disabled; when a threshold Te2 is reached, the spacing is enabled again (Col. 9, lines 54 plus). Therefore, examiner maintains that the references cited and applied in the last office actions for the rejection of the claims are maintained in this office action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 1038 and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 3-6, 22, 24, 26, 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fichou et al. (US#5,790,522).

With respect to claims 1 and 13, Fichou discloses a method for congestion control within a switch having at least one input section that includes an input buffer (receive adapters with buffers 42, shown in Figure 4). The data is transmitted from the input section to an output section through a switching fabric (col. 6, lines 13-31 and Figure 4) and data transmission is paused when congestion is detected within the switching fabric or output section. Each adapter switch defines a period of time for pausing transmission (col. 8, lines 2-8). This period of time is chosen to be long enough so that premature transmission from an input queue does not cause congestion again in the switch fabric. The time period is also chosen to be short enough so that data is not held for excessive periods in an input queue (col. 8, lines

18-25). It is clear that if data is held for too long in an input queue, eventually cell loss will result at the input side of the switch. Furthermore, the invention monitors the switch input queue sizes so as to compare them to certain thresholds (col. 9, lines 53-58). Fichou et al. does not expressly disclose that the time period is computed based on the monitored input queue sizes. However, at the time the invention was made, it would have been obvious to use the input queue size to determine the timer period. One of ordinary skill in the art would have been motivated to use the queue size because it indicates how close a queue is to its maximum capacity, which would be needed in determining how long the system can delay restart before resulting in cell loss at the input.

Regarding claims 2 and 14, Fichou further teaches that the data switch contains an output buffer (queue) and a backpressure signal generator within the switch fabric used when switch congestion is detected (col. 5, lines 15-20 and 30-32).

Regarding claims 3 and 15, Fichou further teaches that a backpressure signal indicates the existence of congestion conditions (col. 8, lines 26-27).

Regarding claims 4 and 16, Fichou further discloses that data transmission is paused when a backpressure signal is received, meaning congestion is detected (col. 8, lines 2-6).

Regarding claims 5 and 17, Fichou further teaches that in practice, congestion is detected when the output queue is full, meaning a high level of occupancy (col. 5, lines 15-18).

Regarding claims 6 and 18, Fichou further discloses that in practice, the output buffer is monitored and when congestion is detected, a congestion indication signal is generated (backpressure) and delivered to input section, which pauses data transmission (col. 5, lines 15-18).

Regarding claims 8, 9, 11, 20, 21 and 23, Fichou discloses spacing of cells for transmission to the switch fabric based on the fullness of input queues (col. 9, lines 51-63). Figure 7 shows two threshold levels, and Figure 8 demonstrates that more thresholds may be used, for example four threshold levels. Each threshold level corresponds to a different spacing between cells for transmission (col. 10, lines 37-50). As the queue becomes more full, the spacing becomes smaller until the queue reaches its fullest threshold, in which case the spacing is zero. This represents an inverse relationship between queue size and spacing between cells. Fichou does not expressly disclose using this threshold and spacing system in response to the backpressure signal resulting from congestion. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a plurality of queue thresholds to determining the timer period between sending cells in response to the backpressure signal. One of ordinary skill in the art would have been motivated to do this to provide an efficient way to prevent cell loss at an input queue, while leaving enough time for congestion in the switch to clear up.

Regarding claims 10 and 22, Fichou discloses a plurality of input buffers (see Figure 4).

Regarding claims 12 and 24, Fichou discloses a manager module (43), which represents the intelligent control device of the present invention.

7. Claims 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fichou et al. (US#5,790,522) as applied to the claims above, and further in view of Ljungberg et al. (US#5,493,566)

Regarding claim 25, Fichou et al. in view of the obvious improvements described above meets all of the limitations of claim 25, except that the restart of data transmission from the input section to the output section is delayed without regard to a data priority. Ljungberg et al. discloses a flow control system for packet switches that throttles traffic coming from input buffers in response to output buffers reaching a threshold value without regard for priority (see Abstract and Figure 5). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to perform the function of delaying data transmission from the input queues of Fichou in accordance with the defined timer values without regard for priority. One of ordinary skill in the art would have been motivated to do this to prevent all cell loss, rather than trying to save higher priority cells by possibly discarding lower priority cells.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Constantin et al. (US#6,198,725) is cited to show the network element delay allocation for efficient use of network resources.

The Suetsugu (US#6,711,133) is cited to show the method for controlling congestion in ATM switching system.

The Chang et al. (US#6,563,792) is cited to show the fuzzy leaky bucket method and apparatus for usage parameter control in ATM networks.

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The Hosein (US#6,442,139) is cited to show the adaptive rate control based on estimation of message queuing delay.

The Golestani (US#5,050,161) is cited to show the congestion management based on multiple framing strategy.

The Kim (US#5,793,436) is cited to show the buffer occupancy control method for use in video buffering verifier.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION THIS ACTION IS MADE FINAL**. See MPEP '706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

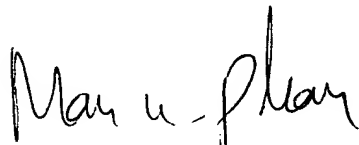
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

July 06, 2005



MAN U. PHAN
PRIMARY EXAMINER